

Corrections in the Weighings.

The balance used could be read directly to $\frac{1}{50}$ milligram, and had been proved to be a most reliable instrument. The weights were an excellent set by Staudinger of Giessen, and showed an average variation from the normal amounting to only 0.000035 gram.

Corrections were introduced—

- (a.) For the weights.
- (b.) For displacement of air and variations in temperature and pressure.
- (c.) For variations arising by reason of the different hygroscopic conditions of the desiccator and balance case.

In any case where condensation of moisture was liable to occur this was corrected for by noting the increment of weight per minute for several minutes whilst exposed in the balance case, and then constructing a curve, with increment of weight and time as ordinate and abscissa, from which the necessary correction at the time of weighing could be introduced. In nearly all cases over 2 grams of the sulphate was used for each determination, and even with 2 grams a difference of 1 milligram in the weight of the zirconia obtained implies a difference of 0.25 in the atomic weight; it is, therefore, evident that in some previous determinations, where less than a gram has been taken, there is considerable risk of error in the atomic weight.

IV. "Magnetic and other Physical Properties of Iron at a High Temperature." By JOHN HOPKINSON, F.R.S. Received April 16, 1889.

(Abstract.)

This paper deals with the same subjects as are dealt with in three short papers* already read before the Royal Society. It gives full particulars of the experiments made both on the samples there mentioned and on other samples.

V. "Determining the Strength of Liquids by means of the Voltaic Balance." By G. GORE, LL.D, F.R.S. Received April 17, 1889.

* 1. "Magnetisation of Iron at High Temperatures." (Preliminary Notice.) 'Roy. Soc. Proc.,' vol. 45, p. 318. 2. "Recalescence of Iron." *Ibid.*, p. 455. 3. "Electrical Resistance of Iron at a High Temperature." *Ibid.*, p. 457.